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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

OBAYANJU, OMONIYI

ART UNIT

PAPER NUMBER

4163

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,529	Applicant(s) HIRANO ET AL.	
	Examiner OMONIYI A. OBAYANJU	Art Unit 4163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 17, 19-21, 25, 29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 17, 19-21, 25, 29 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/21/2008, 12/12/2007, 09/22/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11 and 12 recites the limitation "the common period and the time slots" in lines 1 and 3 of claim 11. Regarding claim 11, the term "the common period" lacks antecedent basis. It is unclear if this is meant to reference "a common periodic length" recited in lines 1-2 or some other period. Thus, the scope which is intended to be encompassed by this claim is unclear. Also the term "the time slots" in this claim is unclear. Claim 11 depends on claim 1 which defines "a time slot" making it unclear what other "time slots" are meant to be claimed. Claim 12 depends on claim 11 and inherits these deficiencies.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 2.
3. Claims 1, 2, 7-10, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Haartsen (US Publication No. 20020126692).

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4. As to claim 1, Haarsten teaches a radio communication method for a radio communication system, which is composed of a plurality of radio communication devices (abs) in such a manner that radio communication devices other than a given radio communication device exist within the communication area of the given radio communication device (pg. 2, pp0017, lines 1-10), wherein a time slot is assigned to the given radio communication device periodically so that it can access a wireless medium in the time slot at higher priority than the other radio communication devices (pg. 2, pp0017, lines 16-18).
5. As to claim 2, Haarsten teaches wherein a different time slot is assigned to each radio communication device (pg. 2, pp0015, lines 4-7).
6. As to claim 7, Haarsten teaches wherein the other radio communication devices are specific radio communication devices (pg. 1, pp0009, lines 1-5).
7. As to claim 8, Haarsten teaches wherein the given radio communication device sends information for identifying the assigned time slot so that the other radio communication devices can select (pg. 2, pp0018, lines 5-13), based on the information, respective time slots different from the time slot assigned to the given radio communication device (pg. 2, pp0018, lines 13-17).
8. As to claims 9 and 10, Haarsten teaches wherein the given radio communication device accesses the wireless medium in the assigned time slot using a waiting time shorter than those for the other radio communication devices and in times slots other than the assigned time slot using a waiting time longer than those for the other radio communication devices (pg. 6, pp0049, lines 1-14).

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9. As to claim 13, Haarsten teaches wherein when an overlap occurs among time slots assigned to the radio communication devices (pg. 4, pp0042, lines 1-4), different time slots are reassigned to all but the given radio communication device so that only the given radio communication device will be assigned the time slot (pg. 4, pp0042, lines 4-9).

10. As to claim 14, Haarsten teaches wherein when the given radio communication device is shut down, the time slots are reassigned so that the other radio communication devices will have chances of using the time slot assigned to the given radio communication device (pg. 5, pp0042, lines 13-15).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3-6, 11, 12, 17, 19, 20, 21, 25, 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haartsen (US Publication No. 20020126692) in view of Montano (US Patent No. 7280518).

13. As to claim 3, Haarsten teaches the limitations of claim 1 as discussed above. However, Haarsten fails to teach wherein communication time on the wireless medium is divided into time slots of equal length, and the divided time slots are assigned to respective radio communication devices. Montano teaches dividing transmission time

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into a plurality of time slot (col. 14, lines 45-55) of equal length (fig. 9, #940) and setting aside time slot for each device (col. 15, lines 1-10). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haarsten with the teachings of Montano to achieve the goal of accurately managing the transmission channel of a communication system to prevent or avoid signal collision in the channel.

14. As to claim 4, Haarsten teaches the limitations of claim 1 as discussed above. However, Haarsten fails to teach wherein the number of time-slot divisions is decided based on the number of other radio communication devices existing in the communication area. Montano teaches time slot shared based on the number of multiple devices in the communication region (col. 16, lines 1-5, and fig. 3, #350 communication regions). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haarsten with the teachings of Montano to achieve the goal of accurately managing the transmission of data in a communication system to prevent or avoid signal or data collision in the channel.

15. As to claims 5 and 17, Haarsten teaches the limitations of claim 4 as discussed above. However, Haarsten fails to teach wherein the given radio communication device detects the number of other radio communication devices existing in the communication area and sends information on the number of other radio communication devices to the other radio communication devices. Montano teaches a given communication device (a coordinator device) communicating with the other devices on how to use the available

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time slot (col. 16, lines 13-15) in a physical communication area (fig. 3, #350). Also, the given communication device (a coordinator device) informing the other communication devices (non-coordinator devices) of any changes in length of available time slot (col. 16, lines 20-25). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haarsten with the teachings of Montano to achieve the goal of accurately carrying out desired communication between a controlling device and non-controlling devices in a communication system.

16. As to claims 6 and 19, Haarsten teaches the limitations of claim 5 as discussed above. However, Haarsten fails to teach wherein the given radio communication device receives information related to the number of the other radio communication devices from the other radio communication devices, and decides on the number of time-slot divisions based on the number of the other radio communication devices existing in the communication area. Montano teaches the given communication device (a coordinator device) communication with the other communication devices (non-coordinator devices) and coordinating the scheduling of each the other communication devices (non-coordinator devices) (col. 16, lines 30-40) and time slot shared among multiple devices (col. 16, lines 1-5, and fig. 3, #350 communication region). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haarsten with the teachings of Montano to achieve the goal of accurately carrying out desired communication between a controlling wireless device and non-controlling wireless devices in a communication system.

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17. As to claim 11, Haarsten teaches the limitations of claim 1 as discussed above. However, Haarsten fails to teach wherein a common periodic length is set among the radio communication devices so that the common period will be divided into the time slots. Montano teaches dividing transmission time into a plurality of time slot (col. 14, lines 45-55) and setting aside time slot for each device (col. 15, lines 1-10). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haarsten with the teachings of Montano to achieve the goal of accurately managing the transmission channel of a communication system to prevent or avoid signal collision in the channel.

18. As to claim 12, Haarsten teaches the limitations of claim 11 as discussed above. However, Haarsten fails to teach wherein the common period is synchronized among the radio communication devices. Montano teaches each the other communication devices (non-coordinator devices) will store a synchronization point time (col. 7, lines 52-55). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haarsten with the teachings of Montano to adequately and efficiently sync wireless terminals over an allocated time in a communication system.

19. As to claim 20, Haarsten teaches wherein said device is constructed in a manner to select one of the time slots and use the selected one as the time slot in which said device can access the wireless medium at higher priority than the other radio communication devices (pg. 2, pp0017, lines 16-18).

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20. As to claim 21, Haarsten teaches the limitations of claim 20 as discussed above. However, Haarsten fails to teach wherein said device is constructed in a manner to send the other radio communication devices information for identifying the selected time slot. Montano teaches the given communication device (a coordinator device) informing the other communication devices (non-coordinator devices) of any changes in length of available time slot (col. 16, lines 20-25). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haarsten with the teachings of Montano to achieve the goal of accurately and adequately allocating transmission time slot of carrying out desired communication between a controlling device and non-controlling devices in a communication system.

21. As to claim 25, Haarsten teaches the limitations of claim 20 as discussed above. However, Haarsten fails to teach wherein said device is constructed in a manner to set the length and start timing of time cycle and divide the time cycle by the time slot. Montano teaches the starting times and durations of the guaranteed time slots are determined by the given communication device (a coordinator device) and sent to the other communication devices (non-coordinator devices) (col. 16, lines 25-30). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haarsten with the teachings of Montano to achieve the goal of accurately and adequately allocating transmission time slot of carrying out desired communication between a controlling device and non-controlling devices in a communication system.

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22. As to claim 29, Haarsten teaches wherein said device is constructed in a manner to access the wireless medium in the selected time slot using a waiting time shorter than those for the other radio communication devices (pg. 6, pp0049, lines 1-14).

23. As to claim 31, Haarsten teaches the limitations of claim 2 as discussed above. However, Haarsten fails to teach wherein communication time on the wireless medium is divided into time slots of equal length, and the divided time slots are assigned to respective radio communication devices. Montano teaches dividing communication time on the wireless medium (transmission time) into a plurality of time slot of equal length (col. 14, lines 45-55 and fig. 9, #940) and setting aside time slot for each device. (col. 15, lines 1-10). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haarsten with the teachings of Montano to achieve the goal of accurately managing the transmission channel of a communication system to prevent or avoid signal collision in the channel.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMONIYI A. OBAYANJU whose telephone number is (571)270-5885. The examiner can normally be reached on Mon - Fri, 7:30 - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Robinson can be reached on 571-272-2319. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/O. A. O./
Examiner, Art Unit 4163

/Mark A. Robinson/
Supervisory Patent Examiner, Art Unit 4163